

REMARKS**Claim Rejections Under 35 U.S.C. § 102**

Claims 1-2, 5-6 and 9 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Halliyal et al.* (U.S. Patent No. 6,674,138). Claims 1-2, 6-7 and 9 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Chang et al.* (U.S. Patent No. 6,461,949). Claims 1-2, 6-7 and 9 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Chang* (U.S. Patent No. 6,797,567). Applicant respectfully traverses this rejection.

Claims 1, 6, and 15 have been amended to include the limitations of claim 14. Claims 2, 3, 5, 7, and 11 – 14 have been canceled without prejudice.

Neither *Halliyal et al.*, *Chang et al.*, nor *Chang* ('567) teach or suggest Applicant's claimed invention as claimed in the amended claims. Claims 1, 6, and 15, as amended, claim a composite or nanolaminate gate dielectric comprised of one of atomic layer deposition (ALD) Lanthanide (Pr, Ne, Sm, Gd, and Dy) Oxide – ALD ZrO₂ – ALD Lanthanide Oxide, ALD Lanthanide Oxide – ALD HfO₂ – ALD Lanthanide Oxide, or ALD Lanthanide Oxide – evaporated HfO₂ – ALD Lanthanide Oxide. None of the references cited by the Examiner teach or suggest such compositions for the gate dielectric.

Claim Rejections Under 35 U.S.C. § 103

Claims 15, 8 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chang et al.* (U.S. Patent No. 6,461,949). Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chang et al.* (U.S. Patent No. 6,461,949) in view of *Min* (U.S. Patent No. 6,669,990). Applicant respectfully traverses this rejection.

Neither *Chang et al.* nor *Min* teach or suggest Applicant's claimed invention as claimed in the amended claims. Claims 8 and 10 depend from claims that Applicant believes to be allowable for the above-discussed reasons. Therefore, dependent claims 8 and 10 are also allowable. Amended claim 15 includes limitations to the nanolaminate gate dielectric that are neither taught nor suggested by the cited art. Specifically, the gate dielectric of amended claim 15 is comprised of one of atomic layer deposition (ALD) Lanthanide (Pr, Ne, Sm, Gd, and Dy) Oxide – ALD ZrO₂ – ALD Lanthanide Oxide, ALD Lanthanide Oxide – ALD HfO₂ – ALD Lanthanide Oxide, or ALD Lanthanide Oxide – evaporated HfO₂ – ALD Lanthanide Oxide.

Claim Rejections Under 35 U.S.C. § 102 or 103

Claims 3 and 4 were rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 (a) as obvious over *Halliyal et al.* (U.S. Patent No. 6,674,138). Claims 1-4, 6-10, 12-13 and 15 were rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kinoshita et al.* (U.S. Patent No. 6,780,708). Claims 1-15 were rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 (a) as obvious over *Hoefler et al.* (U.S. Patent No. 6,713,812).

Neither *Halliyal et al.*, *Kinoshita et al.* nor *Hoefler et al.* teach or suggest the present invention as claimed in the amended claims. Independent claims 1, 6, and 15 have been amended to include the limitations of the gate dielectric comprising one of atomic layer deposition (ALD) Lanthanide (Pr, Ne, Sm, Gd, and Dy) Oxide – ALD ZrO₂ – ALD Lanthanide Oxide, ALD Lanthanide Oxide – ALD HfO₂ – ALD Lanthanide Oxide, or ALD Lanthanide Oxide – evaporated HfO₂ – ALD Lanthanide Oxide. As discussed previously, these compositions are neither taught nor suggested by the cited art.

CONCLUSION

For the above-cited reasons, Applicant respectfully requests that the Examiner allow the claims of the present application. If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 312-2211. No new matter has been added and no additional fee is required by this amendment and response.

Respectfully submitted,

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